Graphic Design

Short notes for beginners · Photoshop · Illustrator · design students

Uncodemy Handwritten Notes · free for students

I. Graphic Design Basics

- **Graphic design** = communicating an idea visually using type, image, colour and layout. Used in logos, posters, social media, packaging, websites, books and ads.
- Design process: Brief → Research → Sketch → Digital draft → Feedback → Final → Delivery. A clear brief (audience, message, size, deadline, budget) saves rework.

➤ Branches of graphic design

Branch	Examples
Branding / identity	Logo, colour palette, brand guidelines
Print design	Brochure, flyer, poster, business card, magazine
Digital / social	Instagram post, banner ad, thumbnail, email
Packaging	Box, label, bottle design
Editorial	Book, magazine, newspaper layout
Motion graphics	Animated logo, explainer video

- Tools: Adobe Photoshop (raster), Illustrator (vector), InDesign (layout), Canva (quick templates), CorelDRAW (popular in print shops), Figma and Affinity as alternatives.

2. Raster vs Vector and File Formats

- **Raster (bitmap)** images are made of pixels. They lose quality when enlarged. Best for photos and painting. **Vector** images use paths and maths, so they scale to any size without blur. Best for logos, icons, illustrations.

Format	Type	Use
JPG / JPEG	Raster, lossy	Photos, small size, no transparency
PNG	Raster, lossless	Transparency, web graphics, screenshots
GIF	Raster, 256 colours	Simple animation
WebP	Raster	Smaller web images
SVG	Vector	Web icons and logos
AI / EPS	Vector	Illustrator files, print
PSD	Layered raster	Editable Photoshop file
PDF	Vector + raster	Print ready and sharing

- **Resolution**: PPI (pixels per inch) for screen, DPI (dots per inch) for print. Web uses 72 ppi (screen size in pixels matters), print needs 300 DPI at final size.

EXAMPLE An A4 poster (8.27 x 11.69 in) at 300 DPI needs 8.27 x 300 ≈ 2481 px by 11.69 x 300 ≈ 3507 px. A 1000 px wide image will look blurry at that size.

3. Colour Theory

- **RGB** (Red, Green, Blue) is additive light for screens: 0,0,0 is black, 255,255,255 is white. **CMYK** (Cyan, Magenta, Yellow, Key/black) is subtractive ink for print. Design for print in CMYK.

- **Colour wheel**: primary (red, yellow, blue), secondary (orange, green, purple), tertiary (mixes). Three properties: **Hue** (the colour), **Saturation** (intensity), **Brightness / Value** (light to dark).

Harmony	Meaning
Monochromatic	One hue with different tints and shades
Analogous	Neighbours on the wheel (blue, teal, green)
Complementary	Opposites (blue and orange), high contrast
Split complementary	One colour + two neighbours of its opposite
Triadic	Three colours evenly spaced
Tetradic	Two complementary pairs

- **Colour psychology**: red = energy, danger, sale. Blue = trust, calm (banks, tech). Green = growth, health. Yellow = happy, attention. Black = luxury. Meanings change with culture.
- **Pantone (PMS)** is a standard spot colour system for exact brand colours. **HEX** codes like #C0392B are used on the web. Check contrast so text stays readable.

> **REMEMBER** Screens show colours that ink cannot. A bright RGB neon will look duller in CMYK print, so always do a proof.

4. Design Principles and Elements

- **Elements**: line, shape, colour, texture, space, form, type. **Principles**: balance, contrast, emphasis, hierarchy, alignment, repetition, proximity, rhythm, unity, white space.
- **Balance**: symmetrical (formal, stable) or asymmetrical (dynamic). **Contrast**: difference in size, colour, weight to create interest. **Emphasis / focal point**: where

the eye goes first.

- **Alignment** keeps items tied to a common edge. **Repetition** builds consistency. **Proximity** groups related items. **White (negative) space** gives clarity and a premium look.
- **Rule of thirds**: divide the layout in a 3 x 3 grid and place key items on the lines or crossings. **Golden ratio** ≈ 1.618 gives pleasing proportions. **Visual hierarchy**: big and bold = first, small and light = last.
- Layout flows: Z pattern (simple pages, ads) and F pattern (text heavy pages). Use grids and margins to keep layouts tidy.

5. Typography

- **Typography** = selecting and arranging type. **Typeface** = family (Helvetica). **Font** = a specific style and size (Helvetica Bold 12 pt).

Category	Feel	Example use
Serif	Traditional, trusted	Books, newspapers, law firms
Sans serif	Clean, modern	Apps, tech brands, signs
Script	Elegant, personal	Invitations, wedding
Display	Strong personality	Posters, headlines
Monospace	Technical, code	Code and tech themes

- **Leading** = line spacing (about 120% of font size for body). **Kerning** = space between two letters. **Tracking** = space across a group of letters. Keep line length around 45 to 75 characters.
- Rules: use 2 fonts at most (heading + body), pair a serif with a sans serif, keep strong hierarchy (title > subtitle > body), avoid all caps for long text, and never stretch fonts.

- Check the licence of fonts before commercial use. Google Fonts are free for commercial use.

6. Photoshop Essentials

- Photoshop edits **raster** images. Key panels: Tools, Layers, Properties, Adjustments, History, Options bar. Work non-destructively with layers, masks, smart objects and adjustment layers.

Shortcut	Action	Shortcut	Action
V	Move tool	B	Brush
M	Marquee select	E	Eraser
W	Quick selection / Magic wand	S	Clone stamp
C	Crop	T	Type
Ctrl+T	Free transform	Ctrl+J	Duplicate layer
Ctrl+Z	Undo	Ctrl+Alt+Z	Step backward
Ctrl+D	Deselect	Ctrl+Shift+I	Invert selection

- **Layer mask**: white shows, black hides, grey is partial. Better than the eraser because it can be undone. **Clipping mask** fits one layer inside another.
- **Blend modes**: Multiply (darkens), Screen (lightens), Overlay (contrast), Soft Light, Colour. Retouching tools: Spot Healing, Healing Brush, Clone Stamp, Content-Aware Fill, Liquify.
- **Smart object** keeps the original quality when you scale. Adjustments: Levels, Curves, Hue/Saturation, Brightness / Contrast. Save PSD for editing and export JPG / PNG for use.

7. Illustrator Essentials

- Illustrator makes **vector** artwork. Key tools: Selection (V), Direct Selection (A), Pen (P), Shape tools (M, L), Type (T), Pathfinder, Shape Builder (Shift+M), Gradient (G), Eyedropper (I).
- **Anchor points and handles**: the Pen tool draws paths with anchor points. Smooth points have handles, corner points do not. Use fewer anchor points for smooth curves.
- **Pathfinder**: Unite, Minus Front, Intersect, Exclude to build shapes. **Strokes and fills**: fill is the inside colour, stroke is the outline. **Artboards** are the pages of the file.
- Before sending type to a printer, use Type → Create Outlines so the font is not missing. Save in AI for editing, export SVG / PDF / PNG for use.

➤ Logo design checklist

- Simple, memorable, works in one colour, readable when very small, scalable, appropriate for the brand, and delivered in vector files with colour and black-and-white versions.

8. Print, Branding and Workflow

- **Bleed** (3 mm extra around the artwork), **trim** (cut line) and **safe margin** (keep text inside, about 5 mm) prevent white edges when a printer cuts the paper.

Item	Common size
Business card	3.5 x 2 in (90 x 50 mm)
A4 / A3 / A5	210 x 297 / 297 x 420 / 148 x 210 mm
Instagram post	1080 x 1080 px (1:1) or 1080 x 1350 px (4:5)
Story / Reel	1080 x 1920 px (9:16)
YouTube thumbnail	1280 x 720 px (16:9)

- **Brand identity**: logo, colours, fonts, imagery style and tone. A **brand guideline** says how to use them correctly. Always create files in the correct size, mode and resolution at the start.
- Printing: offset (large quantity), digital (small quantity), screen printing, flex. Paper: GSM tells weight (130 GSM brochure, 300 GSM card). Finishes: matte, gloss, spot UV, lamination.
- Workflow habits: name layers, keep organised folders, save versions, use grids and guides, take client feedback in rounds, keep a final package (source + exports + fonts).

9. Most Asked Questions (practice)

1. Difference between raster and vector graphics. Give formats of each.
2. RGB vs CMYK: where is each used and why?
3. Explain colour harmonies with examples.
4. State and explain any five design principles.
5. Explain leading, kerning and tracking. Serif vs sans serif.
6. What are layers, masks and blend modes in Photoshop?
7. What is the Pen tool? Explain anchor points and handles.

8. What is bleed? Why is 300 DPI used for print?

9. How do you design a logo? List the steps.

10. What is a brand guideline? What does it contain?

TIP Build a portfolio of 8 to 10 strong pieces: logo set, poster, social media series, packaging and one full branding project. Show before and after, and explain your thinking.